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АГРОКОМПЛЕКС РОССИИ И ЗАРУБЕЖЬЯ

The Rise and Rise of Large Farms: Why Agroholdings Dominate Russia's Agricultural Sector¹

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The main aim of post-Soviet agrarian reforms was to replace Soviet collective farms with much smaller family-based structures characteristic of agricultural production in the West. The rationale for the reforms was based on the belief in the superiority of private over public ownership of businesses, and that the downsizing of Russian farms would make them more efficient. However, twenty years later Russian agricultural production is dominated by large corporate agricultural businesses, which incorporate in their structure dozens of former collective farms. Why have the market reforms resulted in the rise of agroholdings, and are agroholdings here to stay? This paper addresses these questions by putting the development of Russian agroholdings into the wider context of the increase in farm sizes worldwide, and by presenting evidence from two case studies, both located in the Black Earth region, and by focusing on their economies of scale and scope. We conclude that these businesses currently incur significant diseconomies of scale but which are compensated for by economies of scope. We find that the most serious diseconomies of scale are related to labour management and that the technological solutions to these problems favoured by agroholdings risk aggravating the already acute problem of rural unemployment. The future development of business-related institutions and markets will directly affect economies of scope and therefore influence the life-span of very large farms.

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Keywords: agroholdings, incomplete/missing markets, economies of scale, economies of scope

Introduction: aims and results of Russian agrarian reforms

Prior to the market reforms of agriculture there were two major agricultural production sectors in Russia: large collective farms (*kolkhoz*, *sovkhoz*) and individual household plots (*lichnoe podsobnoe khozyastvo*). Collective farms were deemed inherently inefficient because of their organisational form and size. Both organisational forms—whether a production cooperative or a state enterprise—suffered from moral hazard, shirking and free-riding. The size—8,500 ha of farmland and 420 employees on average in 1980s²—was considered too large to be efficiently manageable under market conditions [Lerman 2001, p. 10]. Following the reforms most collective farms changed their legal status (some more than once) into one of the new legal forms permitted by the reforms: state enterprises, municipal enterprises, joint stock companies, limited liability companies, commandite societies, and agricultural production cooperatives [Uzun, Saraikin, Gataulina, Shagaida, Yanbykh, Mary, Gomez y Paloma 2014]. Hereafter we will call this sector “corporate farms”.

The reforms introduced a third category of farm, the Peasant (Farmer) Operator (*krestyanskoe (fermerskoe) khozyastvo*). This category is close to the family farm as it is understood in the West, and for that reason we will call these “family farms” rather than “peasant farms”³. It was this third sector that the policy makers hoped would be increasingly responsible for producing agricultural output, taking agricultural resources primarily from corporate farms. However, the sector was slow to establish itself, handicapped by the harsh macro-economic climate at the time, by the uncertainties surrounding the switch from a centrally planned economy to a market economy, and by the way the assets of collective farms were distributed. Indeed, only 5% of rural residents withdrew shares to set up their own farm businesses, the majority preferred to leave their shares with the corporate farm and carry on with their own household plots [Uzun, Saraikin, Gataulina, Shagaida, Yanbykh, Mary, Gomez y Paloma 2014, p. 47].

The gross share of agricultural output from these three sectors between 1990 and 2012 is shown in *Table 1*. Family farms produced only 3.2% of all agricultural output in 2000, although this share continued to grow and by 2012 reached 8.9%.

The most recent data available on farm structures is for 2006. *Table 2* is based on [Uzun 2010]. Uzun calculated standardised revenue from one item of livestock and one hectare of land and used these standards to estimate the value of agricultural production of each agricultural producer (hereafter unit) in the 2006 census. The census units were grouped according to the size of their standardised revenue (SR), taking an annual revenue of 30,000 roubles as the threshold for a commercial farm (*tovarnoe khozyastvo*). Across the Russian Federation only about 11% of registered units produced sufficient output to be classified as any kind of commercial farm, the remaining 89%

² Fomin gives smaller figures, according to him, the average size of collective enterprises was 4000–5000 ha of land and 200–300 employees with some regional variations [Fomin 2013, p. 92].

³ As Russian statisticians group peasant (farmer) operators with individual entrepreneurs (*individualny predprinimatel*), the category “family farms” in this paper also includes the later.

were subsistence producers (at best). Within this 11% the bulk of the production took place on large (SR 3 million to 30 million roubles) and very large (SR over 30 million roubles) commercial farms. Furthermore, very large commercial farms (i.e. with an estimated value of production over 30 million roubles), 98% of which were corporate farms and only 2% family farms, amounted to a mere 0.01% of the total number of the census units, but managed 37% of sown land, 25.4% of all cattle, 39.5% of all pigs and 60.9% of all poultry.

Table 1. **Gross agricultural production by type of farm (in current prices, % of total output)**

	1990	1995	2000	2005	2010	2011	2012
All farms	100	100	100	100	100	100	100
including:							
Corporate farms	73,7	50,2	45,2	44,6	44,5	47,2	47,9
Household plots	26,3	47,9	51,6	49,3	48,3	43,8	43,2
Family farms [Inc. individual entrepreneurs]	0	1,9	3,2	6,1	7,2	9,0	8,9

Source: [Goskomstat 2013].

These data show a far greater concentration of agricultural production than is evident from the output figures reported in *Table 1*. Another census result, highlighted in [Uzun 2010], is that 299,000 registered agricultural producers produced no output whatsoever. These farms existed only on paper but controlled 38.2 million ha of farmland, suggesting great scope for further restructuring of the agricultural sector.

Among large-scale corporate farms, which now evidently dominate agricultural production in Russia, agroholdings are of particular interest because they are a direct product of the market reforms. Increasingly present since the late 1990s, agroholdings are characterised by their exceptionally large size, the dominance of non-agricultural investors, and a vertically and/or horizontally integrated business structure. Official Russian statistics do not provide separate information about their number, structure, or output, the only comprehensive quantitative analysis of their contribution into agricultural production is found in [Uzun (2) 2012]. He shows that by 2006 agroholdings had already encompassed 21% of all large and middle-size corporate farms and were producing 26.5% of marketed agricultural output [Uzun (2) 2012, p. 136]. The largest hundred agroholdings in Russia farmed in excess of 5 million ha of farmland, managing an average of at least 100,000 ha each [Uzun (2) 2012, p. 139].

Agroholdings differ significantly in their profitability. In 2006 farms belonging to agroholdings established by foreign individuals or foreign companies reported a profitability of 26% (profit as percentage of costs), which was more than twice the average for all large and average size corporate farms in Russia; farms controlled by Russian private (non-government) agroholdings reported 14.4% profitability, while farms of government-owned agroholdings averaged minus 4%, and farms of municipal agroholdings reported profitability of minus 12.5% [Uzun (2) 2012, p. 137]. The wide gap between private and state agroholdings is probably due to a difference in priorities, with business investors seeking a return on capital and local authorities

promoting agroholdings as a way to continue production from the assets of heavily indebted corporate farms and as a way to maintain rural employment [Rylko, Jolly 2005; Hockmann, Bokusheva, Bezlepkina 2007; Fadeeva 2009].

Table 2. Structure of agricultural production (as estimated by Uzun (2010) based on 2006 census of Agricultural Producers)

	Total number (000)	% in the group with SR <30k RUB	% in the group with SR 30k-300k RUB	% in the group with SR 300k-3m RUB	% in the group with SR 3m-30m RUB	% in the group with SR >30m RUB
All farms	36944.3	89.2	10.5	0.2	0.1	0.013
Corporate farms	59.2	21.97	15.0	28.0	27.3	7.9
Family farms	285.1	62.3	21.1	14.8	1.8	0.03
Household plots (1)	22800	83.22	16.59	0.13	0	0
Household plots (2)	13800	99.8	0.07	0	0	0
Land, ha	450660	10.6	3.8	19.0	36.5	30.0
Sown area, ha	74766	2.7	3.3	12.6	44.7	36.8
Grain & legumes	43647	0.2	2.3	14.3	45.4	37.7
Industrial crops	8812	0.1	2.5	17.4	43.0	37.0
Potatoes	2120	59.7	29.5	3.0	4.3	3.5
Vegetables	743	47.4	23.1	10.5	10.1	8.9
Fodder	19444	1.3	2.2	7.8	49.4	39.2
Livestock						
Cattle	23509	5.3	41.0	5.4	22.9	25.4
Pigs	17094	8.2	39.8	4.9	7.6	39.5
Sheep and goats	22478	11.7	40.6	26.8	12.6	8.4
Poultry	391258	15.3	21.2	0.7	1.9	60.9

Household plots (1) – individual household plots. Household plots (2) – household plots in non-commercial associations (dachas, summer cottages etc.).

More than 20 years after the start of the market reforms in Russia it is natural to ask why they have produced such surprising results. The concentration of production and resources among relatively few massive farms is clearly not what the reformers envisaged, nor is the ownership structure described above. The reformers believed that, after privatisation of the assets of collective farms, a family-based private farming sector would rapidly develop, but instead agricultural production is dominated by very large corporate farm businesses which have incorporated many former collective farms into their structure. Why, despite the conventional wisdom that family farms suit agriculture best under market conditions, have agroholdings succeeded in Russia?

The answers suggested in literature include: (1) the cultural determinants of behaviour, formed during tsarist and communist times, which inhibit individualisation

in agriculture [Koester 2005; Petrick 2007]; (2) a bias towards integration induced by local authorities [Hockmann, Bokusheva, Bezlepina 2007]; and (3) land grabbing [Visser, Mamonova, Spoor 2012]. To address this question we, firstly, place Russian agroholdings into a wider context—the rise of large farms worldwide (section 2). In section 3 we examine two counteracting economic forces which underpin the observed trends towards larger farms. In section 4 we present evidence from two case studies of agroholdings in Russia, focusing on their strengths and weaknesses. The conclusion considers the future of agroholdings in Russia.

The global push for large-scale farms

Russia is not unique with regard to the development of agroholdings. Historically, large operations were dominant in plantation crops, but for most temperate crops the backbone of agricultural production were relatively small family-owned farms. However, a review of recent evidence on the rise of large farms across the globe by Deininger and Byerlee shows that over the last two decades many land abundant countries have seen growing investment in large-scale farming based on a non-family corporate model, a trend often accompanied by a growing concentration of land ownership. Typically, large operational units of 10,000 ha or more are horizontally integrated into corporations which control hundreds of thousands of hectares, vertical integration involving shared processing, marketing, and export logistics is also common. The recent interest of institutional investors in agriculture, in response to the 2007–2008 global food crisis, has reinforced this trend. The authors stress that the environmental, social and productivity impacts of large-scale farming vary widely from country to country [Deininger, Byerlee 2011, pp. 701–702].

In Eastern Europe and Central Asia the outcomes of the transition from the soviet system to new agrarian structures have been determined by countries' factor endowment, institutional structure, infrastructure, the share of agriculture in the overall labour force, and the ways the reforms were implemented. In land abundant countries where collective farms were divided into small plots allocated to members, the plots were quickly rented back by companies with access to finance and machinery, and as a result, capital-intensive corporate farming is now dominant. In Russia, Ukraine and Kazakhstan—the region's most land abundant countries—the level of concentration is the highest. In Russia the 30 largest holdings farm 6.7 million ha or 5.5% of the cultivated area, in Ukraine the largest 40 control 4.5 million ha or 13.6% of the cultivated area [Deininger, Byerlee 2011, p. 703].

Structural changes in the USA

At present, most large operations occur in land abundant regions⁴ and there is little evidence of significant recent changes in farm structures in land scarce countries [Deininger, Byerlee 2011, p. 702]. However, a recent report on farm businesses in USA

⁴ Namely, Latin America, Eastern Europe and Central Asia, Southeast Asia, Sub-Saharan Africa.

shows a clear trend towards larger farms. The USA is a land abundant country, but unlike the countries considered by Deininger and Byerlee, it has a highly developed market economy, which makes it an interesting case for comparison.

MacDonald, Korb, Hoppe⁵ reported the size of arable farms in the USA doubled between 1982 and 2007. As recently as the early 1980s most cropland was operated by farms of less than 600 acres (242 ha), today most cropland is on farms with at least 1,100 acres (442 ha) and many are 5 and 10 times that size. These larger farms now dominate crop production [MacDonald, Korb, Hoppe 2013, p. 1]. Changes in the size of livestock enterprises were even greater. In 1987 the midpoint⁶ dairy herd size was 80 cows, by 2007 it had increased to 570. The midpoint of pig farms increased from 1,200 to 30,000 over the same period [MacDonald, Korb, Hoppe 2013, p. 15]. Interestingly, the number of small farms⁷ has also increased since 2000. This reverse in the long-term steady decline in their numbers is due to recent agricultural support programmes and increasing demand for locally grown food. However, many small farms are managed and staffed on a part-time basis, allowing owners of the business to support farm income with off-farm employment, pensions and savings. As such, they reflect a deliberate lifestyle choice. The net result of these changes is a “hollowing out” of the middle size farms.

These long-term shifts in farm size have been accompanied by a move towards greater specialization. Beginning with the separation of livestock from crop farming in the latter half of the 20th century, the consolidation of production has accelerated. In 2007 22% of crop production occurred on farms that grew only a single crop and another 30% on farms with two crops. Only 11% occurred on farms with five or more crops [MacDonald, Korb, Hoppe 2013, Table 13, p. 34]. This concentration was particularly clear in corn and soybean production, 40% of which was on farms with only two crops [MacDonald, Korb, Hoppe 2013, p. 34].

A key driver of these structural changes has been new technologies, in particular, labour saving innovations, bigger and faster capital equipment, improved information technology, chemical herbicides, seed genetics, and changing tillage techniques. Replacing labour with machines eases managerial supervisory constraints, allowing fewer farmers to manage more hectares of land. The pattern of agricultural employment has also been affected. Increased specialisation amplified seasonal fluctuations in demand for labour. Whilst demand for labour has increased during peak periods, for longer periods there is insufficient work to justify employing full-time workers. Consequently, full-time employment on farms has fallen, being replaced by a larger part-time (often self-employed) workforce, contracted to work during peak periods.

These increases in size and specialization mean that farms have become riskier businesses. Their massive projects and invested assets are exposed to adverse movements in commodity prices, unpredictable weather, and diseases. Although large corporations are better equipped to handle technical challenges, they have increasingly turned to production

⁵ MacDonald, Korb, Hoppe used the Census of Agriculture and confidential farm-level data to generate measures of consolidation and changes in farm size for the US between 1982 and 2007.

⁶ Midpoint acreage/dairy herd size is defined as the point at the farm size/herd distribution graph at which half the cropland acres/dairy cows are on farms with more cropland/cows than the midpoint and half on farms with less. It is an especially useful measure for size distributions that are highly skewed.

⁷ Defined as “place that produces or which could normally produce \$1,000 worth of agricultural commodities in a year”. The reported increase in their numbers also reflects a statistical phenomenon. The value of agricultural commodities sold has not been adjusted for inflation. If it had been, the value would have increased to \$2,720/year (172% increase in Producer Price Index between 1974 and 2011) [MacDonald, Korb, Hoppe 2013, p. 6].

and marketing contracts to help manage the price and marketing risk. In USA, contracts, which are predominately used by larger farms, covered 32% of crop production in 2011, compared with 23% in the mid-1990s [MacDonald, Korb, Hoppe 2013, p. ii].

Farming is a heavily regulated sector, and government policies are likely to affect farm structure. American commodity support programmes and direct, area-related, payment schemes favour larger farms, and their crop insurance schemes favour increasing specialisation, though as MacDonald, Korb, and Hoppe warn, the effects occur through multiple channels and can be difficult to analyse.

MacDonald, Korb, and Hoppe conclude that as larger crop farms and larger livestock farms realize better financial returns by making more intensive use of their labour and capital, this “trend is likely to continue” [MacDonald, Korb, Hoppe 2013, p. i]. Despite the increased specialisation of production and the increase in farm size, the ownership structure of the US farming sector has not changed. In 2011, 96% of USA crop farms were owned by families⁸ and accounted for 87% of the value of crop production [MacDonald, Korb, Hoppe 2013, p. 47]. However, the very largest crop and livestock farms are not now owned and operated by families [MacDonald, Korb, Hoppe 2013, p. 46]. In the next section we will look in more detail at the economic forces which come into play in very large farm businesses.

Economies of scale and economies of scope—the driving forces towards larger farms

As farms grow, they gain internal economies of scale, that is, they benefit from a fall in the unit cost of production as output increases. However, a peculiarity of farming is that beyond a certain size internal economies of scale cease and turn into diseconomies. This is due to the high internal transaction costs associated with maintaining managerial control, which is vital, given the importance of many on-the-spot decisions when the working environment is directly exposed to the elements [Allen, Lueck 1998]. Whilst internal diseconomies of scale for agricultural businesses are believed to start at a relatively modest size, external economies of scale might continue to grow with size. For example, a farm business may be able to gain a dominant position in production of a specific commodity. The balance between internal and external economies of scale is likely to be different for each farm business.

Large businesses may also benefit from economies of scope⁹. Like economies of scale, economies of scope refer to the lowering of average unit costs. These occur when: (i) opportunities exist for cross-selling products, (ii) when inputs of one enterprise can be used in other enterprises (e.g. managerial skills, technical know-how and equipment); (iii) inputs are used at different times of the year; and (iv) outputs of one enterprise are inputs to another enterprise. The fact that very few land-based farms have traditionally focused exclusively on one enterprise strongly suggests that economies of scope exist in agriculture [Schmitt 1991].

⁸ Family farms are defined as “one in which the principal operator, and people related to the principal operator by blood or marriage, own more than half of the farm business”. The definition of non-family owned farms is “those operated by cooperatives, by hired managers on behalf of non-operator owners, by large corporations with diverse ownership and any small groups of unrelated people”, a definition which has not changed since 1996 [MacDonald, Korb, Hoppe 2013, p. 47].

⁹ These are sometimes referred to as economies of diversification.

Where there are “missing” markets and/or “incomplete” markets, and when there are doubts about the reliability of the enforcement of contract law, economies of scope can occur through the transfer of produce between different parts of the same business. Ownership of production removes the need to rely on open market transactions and market regulators. Economies of scope are therefore sensitive to societal factors, i.e. (i) institutions which govern the country’s business environment (such ones enforcing contract law and protecting property rights), (ii) access to investment and working capital, (iii) publically funded research and development, and (iv) sector specific policies.

When economies of scope are present they can make the further expansion of the business economically viable and sensible, even though diseconomies of scale increase. However, diseconomies of scope can also occur. For example, expansion involving too many separate products may reduce a company’s focus on their most profitable product lines.

The recent increase in specialisation in the USA suggests these farm businesses are no longer benefiting from economies of scope [Chavas, Kim 2010].

Deininger and Byerlee conclude that technological advances which reduce diseconomies of scale have been a key generic factor in the increase of the farm size. A shortage of labour in frontier areas and a greater emphasis on an integrated supply chain and the certification of produce have been other important drivers. However, in many regions large farms have emerged also in response to policies, poorly protected property rights, and market failures related to the availability of infrastructure and technology. The ability of large companies to integrate operational units horizontally or vertically has proved to be an important advantage. For example, the integration of livestock production with grain and oilseed production in Russia and Ukraine assured feed supplies; some of the largest agroholdings in Argentina are vertically integrated with processors or input suppliers. Vertical integration also allows companies to fill gaps in public services: in Brazil and Ukraine a number of large companies constructed their own port terminals to shield themselves from the limitations of public facilities. In some countries research and development are mostly carried out by private companies. The ability to access foreign capital and the possibility of issuing equity on stock markets have also been essential, especially where local financial markets are badly distorted. Thus in Argentina loans from abroad cost only half the rate that local banks demanded from farmers. Large companies have also been able to exercise superior bargaining power as markets for agricultural inputs and outputs are often highly concentrated: in Argentina large companies are reported to be able to reduce input prices and increase output prices by 10–20%. The dispersal of operations across different geographical areas is another advantage. It allows large companies to self-insure against weather risks, which is particularly important as even in developed countries markets for agricultural insurance are often incomplete [Deininger, Byerlee 2011, pp. 707–708].

This overview shows the complexity of the driving forces behind the rise of large farms worldwide. Some of the drivers are generic, some are country-specific. As farms increase in size they may be disadvantaged by diseconomies of scale but favoured by increased economies of scope. These countervailing forces are related to economic, political, legal, and market structures. Next section examines factors behind the development of large farm businesses in Russia by looking at growth, performance, and problems of two agroholdings in the Black Earth region¹⁰ of the country.

¹⁰ Black Earth region (Chernozemie) in central Russia encompasses Voronezh, Lipetsk, Belgorod, Tambov, Oryol, and Kursk oblasts.

Case study evidence

Research methodology

We chose to use case study methodology to investigate the development of Russian agroholdings because this approach can reveal the detailed information required to assess the trade-offs between economies and diseconomies of scale and scope. Two cases were chosen from the same geographical area to reduce the influence of different climates, employee skill base and availability, and local political priorities on strategic business decisions. Both were informed about the aims of the research and readily agreed to participate.

Interviews were conducted using a semi-structured questionnaire regarding (i) business structure and legal status, (ii) business size, growth and development, (iii) markets for key products and marketing, (iv) managing large farms, (v) factor (input) markets, and (vi) environmental issues. This allowed similar information to be recorded in each case while giving interviewees plenty of opportunity to raise issues they believed to be particularly important to their own business. Case studies provide comparable but tailored information which reveals the similar and different priorities and driving forces which underpin each case's growth and development.

Two cases were selected and visited in summer 2013. Both are publically quoted, largely foreign-owned agroholdings, located in the Black Earth region of Russia. Both are large even by Russian standards. Therefore these businesses (referred to as X and Z to preserve confidentiality) are representative of the most profitable farm businesses in the Russian agrarian sector.

Interviews were conducted with the CEO of Z and several farm managers during visits to their farms and a grain store. We interviewed X's Chief Financial Officer, and attended a lecture given by its Managing Director. We visited one of X's farms and talked to senior agronomist and livestock specialists. The information obtained from these interviews was supported by later research, including a study of each company's press releases and annual reports.

Growth, performance and plans of Case X

X started in 1994 as an agricultural machinery supplier, expanding into agriculture as a producer of grain seeds in 2002. As the business grew it moved into milk production "almost by accident", and from there to beef breeding and rearing. By 2013, X controlled 182,530 ha in Voronezh, Kursk, Kaluga, Orenburg, Tyumen, and Novosibirsk oblasts, employing about 3,000 people. It had approximately 41,180 head of cattle, including 16,885 forage-fed dairy cows, and produced 345 t of milk daily.

The company is quoted on a foreign stock exchange, and its Managing Director is also a major equity holder. It has a complex structure including 24 subsidiary companies, with land owned by subsidiaries of subsidiaries of the parent company. For management purposes the company is divided into six regional branches (one for each oblast), headed by a regional director who is supported by livestock and crop production specialists.

At the time of our visit milk yields were 4,500–10,000 kg/cow, the lower end of the range representing yields at dairy farms which X had only recently taken over. For comparison, the average milk yield in Voronezh oblast in 2012 was 4713 kg/cow [Voronezh statistical year-book 2013, p. 169]. Even with these yields X acknowledged that milk production would not be profitable without the existing array of government support programmes for livestock and dairy enterprises. Without taking into account subsidies, their costs for milk production at modern dairy facilities (1700 forage-fed cows) were reported to be 45.75 cents/kg of sold milk, while the milk price stood at 43.50 cent/kg. With subsidies, their costs were 34.75 cent/kg, meaning an 8.75 cent profit rather than a 2.25 cent loss per kg of sold milk. This has allowed X to consistently report annual trading profits.

Despite its large size X was planning further expansion. Following the same pattern as before, it intended to take on more land, increase the number of livestock, and build new dairy units, to house and milk between 2,200 and 2,800 cows each. However, they also intended to divide their land in Voronezh oblast into three self-contained farms, which would require investment in grain handling facilities at two new sites. Dividing the farm into smaller units would reduce diseconomies of scale as operational control and management becomes easier. This suggests the managerial problems encountered at the current size are substantial¹¹. X's Managing Director believes that the maximum viable farm size is 60–70,000 ha, although he is revising his view in the light of the potential contribution of precision farming and GIS technology to the management and control of field and off-field vehicles. Looking further ahead X remains committed to livestock and dairy production. This strategy is based on the Russian government's commitment to produce 90.2% of milk and milk products domestically by 2020 [FAO 2014, p. 4]. The company's recent investment in milk processing, albeit on a relatively small scale, may be an initial step to becoming a more vertically integrated business in future.

Growth, performance and plans of Case Z

Z was founded in 2005 by two family-backed investment trusts with the initial aim of purchasing agricultural assets. It was floated on a foreign stock exchange in 2007. Z also has a complex structure, including 40 subsidiary companies, 11 of which are operating companies. One reason for this is the need to obey the law relating to the ownership of farmland by foreign citizens and companies. Similarly complex structures are widely used by Russian agroholdings [Skrynnik 2013; Uzun (1) 2012].

By 2013 Z controlled over 308,000 ha of land in Voronezh, Tambov, Kursk, and Lipetsk oblasts, about 250,000 ha of which it owned. Yet only 230,900 ha of their land bank were in production that year. This was a direct result of the initial business strategy to purchase land and other agricultural assets at a time when they believed them to be under-priced. Much of the acquired land had been lying fallow for many years, and the company had to take extensive and resource consuming actions to return it to production. In 2011 Z switched its priority from the acquisition of assets to farming its

¹¹ There could be other reasons why X might be taking this step, for example, if it wished to generate capital by the sale of a part of their business. However, we received no indication of such an intention.

assets profitably, choosing to specialise in producing arable crops because it wanted to farm without being dependent on government support, and Russia is not globally competitive in dairy and beef production but has a global competitive advantage in grain production.

Farming at a profit has proved to be difficult. Z's harvest volumes have varied widely from year to year from 2008 to 2012, and yields were overall disappointing. The company accepts and plans for a yield variation of 30%, which provides a key management challenge. In recent years commodity prices have also been highly volatile, with a standard deviation of over 40%. The combined volatility of crop yields and prices create a substantial revenue risk, so a budgeted revenue of \$138 million could theoretically vary from \$66 to \$210 million. Z was only able to declare its first annual trading profit in 2012.

Table 3. **Financial performance of X and Z**

Item	Case X	Case Z
Revenues 2011	€49.2m	US\$ 68.1m
Profit 2011	€12.2m	US\$ -44m
Profit as % of revenue (2011)	24.80%	-64.60%
Revenues 2012	€72.3m	US\$ 147m
Profit 2012	€17.3m	US\$ 7.2m
Profit as % of revenue (2012)	23.90%	4.90%

By 2013 Z had stopped expanding its land bank and was engaged in asset restructuring, selling outlying land and purchasing “in-fill” land. Its long-term strategy was to develop into an “insulated”, i.e. self-sufficient, farm business. Four priority areas were identified: (i) raise crop yields through improved agronomics; (ii) improve price and reduce price volatility through export programs, long-term customer relationships, physical forward sales, price hedging, and crop insurance; (iii) improve logistics; and (iv) optimise its cost structure. To this end, Z signed a 3-year moratorium of understanding with a western based agro-food company (in 2012) with a large range of products, a decision that led to investing in potato production and it plans to expand the area of irrigated land. Z has also invested in 4 modern grain stores, each with rail access to allow grain to be loaded directly onto wagons for delivery to port terminals on the Black Sea and the Baltic Sea. Z's export program was part of a strategy to hedge prices, as Russia lacks a domestic market for the forward sales of grains. The fact that the Russian domestic wheat price tends to be lower than the international price also played role in the decision. Z planed in 2015 to sell 30% of its production to this agro-food company, 30% through its export program, and the remaining 40% on the spot market (where historically the majority of Z sales had been executed).

Economies of scale of X and Z

This section examines the degree to which X and Z benefit from or are disadvantaged by internal and external economies or diseconomies of scale. The analysis focuses on the areas where benefits and disadvantages of size are likely to occur: the management of production process, the control of labour and marketing, and access to capital and land.

Management of field work

Both farms have very large distances from their northern to their southern boundary. For X it was 70 km as the crow flies, 120 km by road. The direct north to south distance for Z was 100 km, with a railway (with very few crossings) dividing its land into two, in a ratio of 40:60.

Managing these large areas presents severe operational challenges, especially given the short growing season, very hot summers and cold winters. Due to the climatic conditions not all land can always be planted. Therefore a key management decision for both companies is how much surplus capacity they should carry? Should they gear-up for an average season and risk leaving large areas unplanted, or should they equip for the worst-case scenario and face higher equipment finance and depreciation charges? One of the costs of being under-equipped is the late completion of work, which is difficult to estimate in terms of yield reduction. For all farm businesses timeliness is vital because a delay in one operation can have knock-on consequences for the next, increasing the severity of yield loss. Z admitted that they had been under-equipped but were taking measures to address this problem¹².

Both X and Z use the block system, i.e. several neighbouring fields are farmed together as a single block. Growing crops in blocks rather than individual field rotation helps reduce logistical problems and assists with the supervision of the workforce. It allows large areas of land to be managed in a single visit by a large and well equipped, self-sufficient mobile teams, (which would include mobile workstations, fuel tankers and all inputs required). Z's blocks tend to be slightly smaller, at 2,000 ha than X's at 3,000 ha.

Labour management

The large size of the area farmed by X and Z represents a significant additional problem for maintaining managerial control over operations, in particular over the quality of the work done. Much field-work is devolved to workers who cannot be readily monitored: it is impossible for farm managers to supervise every activity even on small farms. This substantial logistical management requires meticulous planning and depends on every employee having a clear understanding of their roles and responsibilities in each

¹² However, we were unable to obtain sufficiently detailed data to compare asset registers of the two businesses.

“campaign”. Both companies spend considerable time and money training their staff so they are more reliable in-field. Both companies employed Russian workers for their field and livestock work, but X also employed Russian managers and specialists, while Z continued to rely on foreign citizens who had impressive credentials in their speciality area but limited experience of working in Russia.

To help with labour management and control Z has decided to invest into GIS technology, with intention to fit satellite location finders to all their 700 or so mobile units and connect them to a central management terminal, enabling real time monitoring of the individual and collective performance. This should improve logistics and thereby timeliness. It may also be another step towards combating theft. To the extent that all its dairy units are zero grazed, and milking is a daily routine conducted under cover where close supervision is possible, X has some advantages over Z. However, maintaining fertility management in large herds provides a considerable operational challenge. Since our visit X has also installed GIS though they did not mention their intention to do so during our interviews.

Both companies still used the “norm” system to calculate weekly wages. The norm system was inherited from the working practices on farms in the soviet period and is principally geared to incentivise workers to turn up and actually work. This makes it biased towards the quantity of work done rather than its quality. In European terms, the norm system can be considered similar to, albeit more complicated than, the “piece work” system. It is extremely bureaucratic and imposes significant administrative costs on the business as it requires a large number of office staff. Moreover, it represents the practice of penalising workers for poor performance, rather than encouraging workers to identify and discuss problems. If norms are set at the wrong level, workers will need to work too fast or too slowly to earn their average wage, and this is another way in which this payment system can affect the quality of the work done. These inefficiencies add to transaction costs, as similar problems are likely to recur without senior management being able to determine what is causing them, and as quality management has to be devolved to a supervisor, it can be costly and difficult to trace who was the cause of the poor work. Both companies would like to change this payment system, to make it less expensive to operate and to incentivise quality of work, but are not quite sure how to do this.

Apart from continuous tweaking the norm system, X has taken one practical step to reduce the cost of paying wages by paying directly into their employees’ bank accounts. A bank has installed cash point machines in X’s largest farmyards. Neither X nor Z remunerate employees with “payment in kind”, as this is a costly and time consuming practice (though both sell farm produce to their workers at cost).

Both companies lay-off the workers when they take over a new farm, re-employing only those whom they deem suitable. However, X, being a livestock business, pays its workers throughout the year while at Z many workers are laid-off over the winter period. Both companies reported a shortage of qualified and reliable workers, but believed they were paying very competitive wages. The direct labour costs are a small part of expenses in both companies: Z’s labour costs accounted only for 3% of direct production costs, and X’s labour costs were 9% of the total costs of 1 kg of sold milk.

Managerial difficulties reflect deep-rooted problems with the labour market in rural Russia, where unemployment, low incomes, deprivation, and outflow of young people are major social problems [Fomin 2013]. Russia still has a relatively high proportion of rural population. In Voronezh oblast it was 34.1% in 2012 [Voronezh Oblast 2013, p. 31], and the level of rural unemployment was 8.4% which is almost twice the urban

level [Voronezh Oblast 2013, p. 47]. The average monthly wage was 14,296 roubles in agriculture, compared to 19,538 roubles in the economy in general [Voronezh Oblast 2013, p. 60], and there was continuous out-migration from the countryside [Voronezh Oblast 2013, p. 39]. Our interviewees said the ablest people tend to leave the countryside, and many who stay are not employable. Despite an apparent excess of labour in the rural areas employers need to do more than simply pay above its market price to recruit and retain workers. In rural Russia the supportive role of large farming enterprises is still generally accepted as a norm [Shubin 2012; Davydova, Franks 2006]. This is partly why both companies supported local communities. X sponsored a kindergarten, a secondary school, sport facilities, and local churches, but was particularly generous to their employees with a housing programme for its specialists and providing interest-free loans for housing improvement and purchasing personal vehicles. Z provided financial support to local events and social projects.

On-farm theft is another problem related to the “human factor”. Both companies have a zero-tolerance policy: theft leads to instant dismissal and Z also automatically initiates legal proceedings. Both companies employed a high proportion of their workforce in security: for example a 50,000 ha farm of Z’s which we visited employed 65 in security-related duties out of a workforce of 330. A FAO & EBRD report estimated agroholding spending on combating pilfering and vandalism on their farms (be it spending on guard services or on social programmes in the villages they operate “in order to maintain the peace”) at around 10% of total production costs, “which means a 10% loss in competitiveness”. The report also identified a link between the development of agroholdings and rural unemployment. The modernisation of farming undertaken by agroholdings increases labour productivity and correspondingly decreases demand for labour in rural areas. Moreover, faced with costly control over workers in large-scale farm enterprises, agroholdings tend to further substitute labour with machinery. But workers who have been laid-off from farms can find no alternative employment in the villages because of the historically chronic lack of non-agricultural jobs in rural areas, while the vastness of most Russian regions means that commuting to town for work is not an option either. Consequently, “the more agroholdings develop their business, the more unemployment is seen in the rural areas of their operation”, which causes social tension [FAO and EBRD 2009, p. 48]. One could add: the more agroholdings develop their business, the more they undermine the social foundation of their productivity. A cheap but not very diligent workforce and hostile villagers are not conducive to success. Finding themselves locked into this contradiction, agroholdings have responded by fortifying their farms against a hostile environment and by positioning themselves as sponsors in the area. In the long-run support for social programmes might be a better investment than paying security staff, but lifting entire villages out of poverty is a formidable task even for these large businesses.

Sales

In Voronezh oblast, X produced 320 t of milk daily—about a quarter of the milk production of the entire oblast. X did not forward sell their products, and no production input materials or fuels were purchased this way. Longer-term supply contracts were only used between X’s individual production locations and processing plants, typically without stipulating

binding quantities. Nonetheless, in 2012 X had two customers with a share of revenue exceeding 10%—payments from one amounted to EUR 16.7 million (23.1%), and from the other to EUR 11 million (15.2%) of the total revenue of the company.

Z was seeking to sell forward significant quantities of their products. It hedged its production, using CBOT¹³ and MATIF¹⁴ futures and options, locking into forward prices when physical sales were not possible. These are the strategies employed by large agro-businesses in the USA, where bigger risks, associated with larger size, are offset by a range of financial instruments.

Access to capital

Both companies grew very quickly, raising capital on foreign capital markets. In 2012 X issued two corporate bonds for €50m and €60m with attractive interest rates (paid in Euros). Z was founded by two family-backed investment funds. Following several private placements¹⁵ and a bond issue of €55m, Z successfully raised additional capital through an IPO in 2007. It refinanced several bonds, and raised additional capital through a rights issue in 2012, primarily to finance the link with the agro-food company and to supply additional working capital. This reliance on foreign capital markets has created significant currency risks for both companies.

Z has avoided taking loans from Russian banks but is considering changing this policy. X decided to borrow from Russian banks because of the subsidised interest payments. In summer 2013 the market interest rate was 11%, but investment on buildings and infrastructure attracted 100% interest rebate. Investment in cows attracted a 70% rebate, and in equipment a 50% rebate, thereby costing the company only 3% and 5.5% respectively. In 2012 X received government subsidies to the amount of EUR 3,336,000 as on-going production support, another EUR 1,334,000 for investment in infrastructure, and EUR 8,674,000 for the purchase of breeding livestock. According to X, the Federal working capital interest rate subsidy programme was a success even though changes introduced in 2013 extended the period between the paying the interest and receiving the rebate. Although the programme was open to all livestock and dairy businesses, X's size and reputation helped them to attract these grants, and to withstand delayed rebate payments.

Access to land

X owns about 55% of its land bank, Z 81.2%, the remaining land in both companies was farmed under long-term leases. Both companies paid their rents promptly and regularly. However, there are no land tenure regulations relating to fixing a fair rent in Russia, and no rural land valuation service is available to arbitrate between landlord and tenant.

¹³ Chicago Board of Trade

¹⁴ Marche a Terme International de France (futures exchange and clearing house in Paris)

¹⁵ A funding round of securities which are sold through private offering to a number of chosen investors.

Both companies paid for the registration of land. Z calculated that it paid on average \$250/ha, but estimated it cost the same to organise the registration, arrange for a land survey, and pay the land share owner's registration fee. Similar figures were given at X. Federal law allows each oblast to determine how it operates land registration, which results in differences in the survey and registration procedures. This increases land acquisition costs as area-specific expertise is needed. Both companies used a team of lawyers to register and purchase land.

It remains difficult to raise capital in Russia for investing in agriculture. There is no practice of using land value as collateral. The short time since land has started being traded, and different restrictions on how land can be registered and transferred at oblast level, mean that land values are not yet established. The very large areas which remain nominally owned by land share owners may soon come under local administrative control. Should this land be brought to the market, it might depress current land rental and purchase values. Furthermore, bank liquidity has been restricted post-2008, as banks were required to increase capital retention. All these factors benefit large companies with access to overseas capital markets, albeit exposing them to exchange rate risks.

Economies of scope of X and Z

Diversification as a survival strategy is more necessary where there are unpredictable markets and unpredictable weather conditions. X's core business is milk production (55.6% of total revenues in 2013), its crop production focuses on producing seeds, and fodder for the company's herds. X also grows crops for sale, including wheat, maize, sugar beet and oilseed. Its meat production is relatively insignificant. Although almost self-sufficient in fodder, it purchases heifers from abroad. While X estimates its year-to-year yield variability as high as 50% it decided in 2013 not to pay the full premium of €1 million for crop insurance. This decision to carry its crop production risks means internal diversification measures become even more important, which X achieves by the regional distribution of their cultivation areas. X does not invest heavily in research.

Z deliberately focuses on producing commodities in which Russia is globally competitive. However, the ban on grain exports in 2010–2011 adversely affected Z's market revenues. The partnership with an agro-food company allowed Z to grow higher value crops on contract. The company buys insurance against extreme weather events. Z found it could not rely on publicly-funded research to improve yields, and in 2011 established a 36 ha crop trial site. It has also invested in shipping grain from their store via rail and directly contracts railway wagons rather than buying services from transport operators.

The lack or limited efficiency of policing state regulations increases the cost of doing business, and raises exposure to counter-party risk (for example, bankruptcy or fraud coupled with little chance of redress through expensive and time-consuming legal action). The ability to avoid dependence on others in such a business environment is an important source of economies of scope. As shown above, both companies seek to minimise their reliance on open-market transactions to source inputs and services.

When law enforcement is unreliable, relationships with local and regional administrations become critical. Z and X differ in their approach to the oblast administration. X deliberately works with local administrations' perspectives and wishes,

this was one reason why it developed into livestock farming which local authorities prefer because these enterprises are encouraged by federal agricultural programmes, and because such farms employ more staff per ha than arable-based farms, thereby helping to reduce rural unemployment. X's senior management work hard "meeting and greeting" oblast administrators allowing them to address issues in person whenever possible. Z chose to focus on operating profitability rather than administrative wishes, and considers its responsibilities as a business largely confined to bringing employment and tax revenues to the area. Relationships with the oblast administration were not helped by difficulties in planning and coordinating a large investment in land irrigation and by the cancellation of plans to build a potato storage warehouse following a late change to local bye-laws. Neither X or Z were prepared to comment on how issues related to the administration of the law and apparent administrative arbitrariness affects the management of their businesses.

Summary of evidence

Both companies enjoy benefits of size, for example, being able to raise capital on foreign stock markets, to employ experts to arrange land registration and acquisition, X spreads its risk by the wide geographic spread of its farms, and Z's size has allowed it to justify investing in a crop-growing research station.

But both companies also face diseconomies of scale with regard to labour management, logistical operational control and quality control. This is consistent with earlier research which found no inherent economies of size in farm production in Russia [Deininger, Byerlee 2011, p. 707]. Responses to these problems were similar in X and Z: investment in GIS and precision farming. How successful this will be in practice remains to be seen. The technological solutions to the labour management problems will lead to a further reduction in the labour force and thereby have important implications for rural communities. The companies need to be sensitive to how their presence impacts upon the social fabric of the Russian countryside and find a way to avoid aggravating existing problems.

Institutional arrangements determine the extent to which there are economies of scope. Both companies seek to benefit from economies of scope. Both have been stretched by the difficult business environment in Russia and in the agro-food sector in particular. X uses much of its crop production as input to its dairy enterprise. Z's contract with the large processor with regard to supplying it with a wide range of commodities has allowed it to diversify into the production of high value crops, and because Z's counter party is a western-based company, it can have more confidence that contractual obligations will be honoured. Having horizontally integrated their businesses both X and Z are now taking initial steps towards vertical integration: X into milk processing, and Z by securing market contracts.

The strengths of both companies are in the use of modern production techniques and technologies, and communication systems for labour management and supervision. Both companies are likely to enjoy capital growth through the appreciation of their assets, and both have further productivity potential. They both have weaknesses, some of which are similar and some are different. Z reports poor profit levels, and X's profits are dependent on government subsidies. The companies are exposed to exchange rate movements

through their bond obligations which are denominated in foreign currencies, whilst their assets are valued in roubles. Both companies are also affected by government policy and foreign policy but in different ways. Russia's entry into the WTO is will eventually require its use of tariffs to be replaced by less trade-distorting measures. This may benefit farming as these tend to have higher transfer efficiencies than tariffs (i.e. a higher share of support subsidies is captured by farm businesses) [*Portugal* (undated), pp. 24–25], although there are expectations of considerable difficulties [*Barsukova* 2013, *Barsukova* 2014, *Petrick* 2014]. These changes are of more concern to X because of its focus on subsidy supported dairy production, but current trade embargoes and export tariffs are likely to have a larger adverse effect on Z because of its use of export markets.

Conclusions

In post-Soviet Russia much larger agroholdings have emerged in place of collective farms. Unlike the USA, where the trend towards bigger farms has been driven mostly by technological and institutional advances which help to overcome diseconomies of scale, in Russia it has been heavily dependent on other factors. The reasons why agroholdings have emerged in Russia include missing or incomplete markets, poor enforcement of contract law and property rights, limited access to investment and working capital, a difficult business environment, as well as sector-specific policies that benefit (not always intentionally) larger businesses.

The distribution of small packages of land in the form of land shares to a large number of people made it difficult to collect the principal input into a farm with single ownership on an effective business scale. This created breathing space for the former collective farms to adapt to the new market environment. From the 1990s to early 2000s loss-making farms which could convince the authorities that they might become viable were helped to avoid bankruptcy. In reality, there was little alternative to supporting the large number of loss making corporate farms because of their central role as the primary employer of large areas of the countryside [*Franks, Davydova* 2005]. Agroholdings have moved into the gap created by the inability of many former collective farms to use borrowed time to become profitable. There were too few endogenous family-based farms established after 1992, and those that remained in business during the 2000s could not compete with agroholdings in the acquisition of land¹⁶. Consequently, a new generation of even larger farms has become the backbone of food production and increasingly of food processing and distribution.

A very bureaucratic regulation system, coupled with poorly enforced contract law and administrative arbitrariness, presents a business environment that is difficult to work in. Add to this; (i) substantial production risks due to the volatility of yields, (ii) financial risks associated with exchange rates and market price volatility, (iii) working in a sector that has substantial government intervention which (iv) frequently changes priorities—investors need the expectation of considerable returns to sink cash into what is traditionally an asset-rich cash-poor business. It is not by accident that some agroholdings started as investment-motivated rather than income-motivated ventures,

¹⁶ The incomplete land market is a greater problem for smaller farm businesses. Lerman argues on the basis of data for the European and North American countries that land leasing is conducive to larger farms [*Lerman* 2001, p. 8].

aiming to purchase land at a time when it was thought to be under-priced. It can be seen as a part of the global rush for land reserves which are expected to become increasingly scarce due to the combined global trends of the soaring world population, increasing water shortages, and diminishing productivity growth [Visser; Mamonova, Spoor 2012]. The law in Russia obliges owners of farmland to either cultivate land or sell it. Consequently, agroholdings cannot simply hoard land in expectation of its appreciation. They must farm, and farm profitably, as even a large business cannot sustain operating losses indefinitely.

Both case study companies have made substantial investments in fixed and working capital, in the process creating businesses that incorporate dozens of former kolkhozes and sovkhozes. It was simply not possible for the initial owners of land shares to build up businesses of this scale. Although smaller family farms do exist, it is necessary to be a large company to take on the financial, business and political risks involved in making substantial investment in land, to improve and modernise equipment and farming techniques, and provide training to overcome deficiencies in labour and managerial skills. The evidence in this study suggests that the costs of maintaining operational control over such large areas are higher than the financial benefits associated with size. Technology is likely to have an impact on this balance between costs and benefits. Investments in GIS and precision farming, if thoughtfully used, should help remove logistical bottlenecks and create efficiency savings. However, in-house employee training and changing expectations regarding the working environment may take longer to deliver benefits.

These large farms exist because their economies of scope offset their diseconomies of scale. But will this be the case in future? How long economies of scope last will depend on reforms of the incomplete markets, which may be quick for some markets but take longer for others. The rate and success of market reforms are likely to depend on the priorities of Russia's industrial and agricultural policies (including the method of support for farm businesses), on the nature of reforms introduced to public sector institutions, in particular, to the legal system and capital markets, and on improvements in the provision of public goods for general use, such as research, development, and transport infrastructure. Therefore the development of agroholdings and their likely longevity are both determined by the rate at which the Russian economy is reformed, as this will reduce economies of scope. If this happens, agroholdings will have less incentive to maintain a size which incurs such diseconomies of scale. Our evidence suggests that the most serious diseconomies of scale are related to labour management. Whether agroholdings will help to solve the social problems of Russian countryside, and in doing so help themselves, or whether these problems will prove to be their Achilles heel is yet to be seen.

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Возрождение крупных хозяйств в России: почему агрохолдинги доминируют в российском аграрном секторе¹⁷

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Ключевые слова: агрохолдинги, неполные/отсутствующие рынки, экономия на масштабе производства, экономия от совмещения

Первоначальной целью рыночных реформ сельского хозяйства в России явилась замена крупных и неэффективных коллективных хозяйств на относительно

¹⁷ Авторы хотели бы выразить признательность Ольге Петровне Фадеевой, Отдел социальных проблем Института экономики и организации промышленного производства (ИЭОПП), за помощь в проведении полевого исследования, а также работникам агрохолдингов за уделенное время и подробные ответы на многочисленные вопросы.

небольшие семейные фермы, характерные для западных экономик. Но развитие фермерских хозяйств шло медленно, и к 2012 г. их доля в сельскохозяйственной продукции составляла лишь 8,9%. Между тем, как показала классификация сельскохозяйственных производителей на основе данных переписи 2006 г., концентрация товарного сельскохозяйственного производства в России очень высока. Основная масса товарной продукции производится в крупных и очень крупных хозяйствах: в 2006 г. всего 0,113% сельскохозяйственных производителей контролировали 81,5% посевной площади, и на них приходилось 48,3% поголовья крупного рогатого скота, 47,1% свиней и 62,8% птицы.

Среди крупных сельскохозяйственных производителей агрохолдинги, являясь прямым результатом рыночных реформ, представляют наибольший интерес: в 2006 г. в них входило 21% всех крупных и средних сельскохозяйственных организаций, а доля в товарной продукции достигла 26,5%. Своими размерами агрохолдинги превосходили колхозы и совхозы, на смену которым пришли. В научной литературе развитие агрохолдингов в России объясняется: (1) культурными детерминантами поведения, сложившимися в царское и советское время и препятствующими индивидуализации сельскохозяйственного производства; (2) тяготением к агрохолдингам со стороны местных органов власти и (3) «захватом земли» в качестве движущего мотива создания мегаферм.

В настоящей статье вопрос о причинах возникновения агрохолдингов в России и их вероятного будущего рассматривается через призму анализа основных движущих сил, определивших тенденцию в сторону крупномасштабного сельскохозяйственного производства в других странах мира; приводятся результаты исследования двух расположенных в черноземной зоне России агрохолдингов.

Всемирный рывок в сторону крупномасштабного сельскохозяйственного производства

Россия не уникальна в отношении развития агрохолдингов: за последние двадцать лет во многих богатых земельными ресурсами регионах мира наблюдается рост инвестиций в крупномасштабное сельскохозяйственное производство, основанное на корпоративной модели. Эта тенденция часто сопровождается увеличением концентрации землевладения, когда хозяйства с землей 10 тыс. га и больше горизонтально интегрированы в холдинговые компании, контролирующие сотни тысяч гектаров. Характерна также и вертикальная интеграция, объединяющая в одну холдинговую структуру сельскохозяйственное производство, переработку, маркетинг и транспортировку на экспорт. При этом результаты деятельности таких компаний с точки зрения экономической эффективности, воздействия на окружающую среду и социальных последствий их присутствия значительно разнятся в зависимости от страны.

В государствах Восточной Европы и Средней Азии итоги рыночных реформ сельского хозяйства зависели от наделенности страны земельными ресурсами, от ее институциональной системы, состояния инфраструктуры, доли сельского хозяйства в трудовых ресурсах и выбранного способа проведения реформ. В сельскохозяйственном производстве богатых земель государств, разделивших землю коллективных хозяйств между их членами, в настоящее время доминируют корпо-

рации. В России, на Украине и в Казахстане (самых богатых землей) наблюдается наивысший уровень концентрации землепользования в агрохолдингах.

В США (богатых земельными ресурсами, но обладающих к тому же и высокоразвитой рыночной экономикой) в этот период также отмечалась тенденция к увеличению размера сельскохозяйственных предприятий (особенно в животноводстве), при этом численность хозяйств средней величины сокращалась, а количество мелких ферм росло; владельцы последних совмещали занятия фермерством с другой работой или пополняли свой доход за счет пенсий и сбережений. Следует подчеркнуть, что эти долгосрочные сдвиги сопровождались усилением специализации.

Основной движущей силой укрупнения хозяйств являлись новые технологии (в особенности трудосберегающие). Эти изменения повлияли и на занятость в сельском хозяйстве: углубление специализации усугубило сезонные колебания в потребности в рабочей силе, в результате чего количество постоянных работников в сельском хозяйстве снизилось, а число нанятых по контракту на короткий сезон увеличилось. Рост масштабности и узкая специализация предприятия привели к повышению рисков, связанных с колебаниями цен, погодой, болезнями и вредителями, и для минимизации этих рисков крупные корпорации прибегли к контрактам и различным финансовым инструментам. Поскольку в настоящее время крупные хозяйства более рентабельны, можно ожидать, что тенденция к увеличению размера хозяйств будет сохраняться. Важно заметить, что, несмотря на это, основой сельскохозяйственного производства в США остается семейная ферма, тем не менее даже там самые крупные хозяйства принадлежат корпорациям, а не отдельным семьям.

Экономия на масштабах производства и экономия от совмещения в качестве движущей силы увеличения размеров хозяйств

Особенностью сельского хозяйства является то, что экономия, обусловленная ростом масштаба производства, может прекратиться и перейти в ее противоположность – дезэкономия – при относительно небольшом размере предприятия. Это вызвано трудностями сохранения управленческого контроля над производством в ситуации, когда многие важные решения должны приниматься работниками на месте. Однако преимущества увеличения размера предприятия (например, занятие ведущей позиции в производстве определенного товара) могут перевешивать это обстоятельство и обуславливать дальнейший рост.

Крупные предприятия могут получать экономию и от совмещения. В ситуации отсутствующих или неполных рынков или сомнения в надежности защиты контрактных отношений законом экономия от совмещения возникает посредством самодостаточности, поскольку владение факторами производства позволяет избежать зависимости от других производителей и официальных лиц. Таким образом, институциональная среда существенно влияет на возможность получения экономии от совмещения, а ее наличие может компенсировать дезэкономия на масштабах производства.

В США усиливающаяся специализация свидетельствует о том, что там сельскохозяйственные предприятия не получают экономию от совмещения. Напротив, в развивающихся странах и странах с переходной экономикой возможность

интегрировать различные предприятия в горизонтальные и вертикальные структуры оказалась важным преимуществом крупных компаний, позволяющим компенсировать отсутствие или недостаточное развитие рынков и преодолевать институциональные и инфраструктурные недостатки страны. Достоинства таких компаний включают в себя возможность получения кредитов за рубежом и более выгодной цены в переговорах с поставщиками и покупателями, а также минимизацию погодных рисков, благодаря ведению бизнеса в нескольких географически отдаленных районах.

Результаты исследования

Информация, собранная во время полевого исследования, проведенного летом 2013 г., была впоследствии дополнена анализом годовых отчетов компаний и материалов в средствах массовой информации.

Агрохолдинг *X* – один из крупнейших производителей молока в России с земельным банком более 180 тыс. га в шести областях, располагает общим стадом численностью около 41 тыс. крупного рогатого скота, в том числе 17 тыс. коров; в компании занято 3 000 работников, она котируется на зарубежной бирже, директор является ее главным акционером. Агрохолдинг *X* имеет сложную структуру, в которой земля принадлежит внучатым компаниям. Во время полевого исследования летом 2013 г. надой молока составляли 4 500–10 000 литров с коровы, причем нижний предел относился к фермам, недавно перешедшим в агрохолдинг. Однако следует отметить, что на тот момент без государственных субсидий и даже на новых фермах с современным оборудованием производство молока не было бы рентабельным. Несмотря на свой большой размер, компания *X* не отказалась от планов дальнейшей экспансии в рамках животноводческой специализации – стратегии, связанной с решением правительства добиться самообеспечения страны основными продуктами питания. Недавние капиталовложения в переработку молока, хотя и незначительные, позволяют предполагать, что в будущем холдинг *X* сможет стать вертикально интегрированной компанией.

Агрохолдинг *Z* специализируется на выращивании пшеницы, масличных культур, картофеля и сахарной свеклы; его земельный банк в четырех областях составляет 308 тыс. га, из которых в 2013 г. были засеяны 250 тыс. га; численность работников – около 2 000 чел. Компания *Z* котируется на бирже за рубежом и имеет сложную структуру с дочерними и внучатыми предприятиями, аналогичную холдингу *X*. Изначально компания *Z* возникла как инвестиционный фонд для приобретения земли в России, но в 2011 г. его приоритеты сменились на обеспечение рентабельного производства. В выборе специализации определяющим было желание избежать зависимости от государственной поддержки благодаря производству конкурентоспособной продукции. Однако недостаточно высокая и неустойчивая урожайность (30-процентное стандартное отклонение) и резкие колебания цен на продукцию (40-процентное стандартное отклонение) привели к тому, что за период своей производственной деятельности (2008–2012 гг.) холдинг *Z* получил годовую прибыль только в 2012 г., а к 2013 г. компания *Z* прекратила экспансию и занялась рационализацией своего земельного банка. Долговременная стратегия этого агрохолдинга направлена на создание изолированного самодостаточного бизнеса,

способного минимизировать ценовые риски через долговременные контрактные отношения, хедирование на зарубежных биржах и предварительные продажи.

В поисках источников капиталовложений при продаже своей продукции, а также при покупке земли компании *X* и *Z* пользовались преимуществами своего большого размера. В случае холдинга *X* рассредоточение растениеводческого производства в разных регионах страны снизило риск полной потери урожая из-за неблагоприятных погодных условий, а компания *Z* благодаря своему размеру смогла оправдать расходы на создание экспериментальной лаборатории, работающей над проблемой повышения урожайности.

С другой стороны, управление полевыми работами и работниками стало именно той областью, в которой агрохолдинги *X* и *Z* вместо экономии на масштабе производства несли существенные потери. Обе компании продолжали пользоваться системой нормирования труда, унаследованной с советских времен. Однако со времени нашего полевого исследования они внедрили геоинформационную систему (ГИС) с целью улучшения логистики и облегчения контроля над работниками. Технологические решения проблем управления, как и в целом модернизация производства, ведут к дальнейшему сокращению занятости на сельскохозяйственных предприятиях и тем самым могут иметь важные последствия для сельских сообществ.

Следует подчеркнуть, что и компания *X*, и компания *Z* несли убытки от недостаточной защищенности законом контрагентных отношений, недостатка квалифицированных рабочих и управленческих кадров, а *Z* – также и от отсутствия внутреннего рынка предварительных продаж. Обе стремились минимизировать свою зависимость от других контрагентов на рынке: компания *X* полностью обеспечивала себя кормами и начала строительство комплекса по переработке молока, а холдинг *Z* подписал с международной пищевой компанией долговременные соглашения о снабжении сырьем и предпринял шаги с целью обеспечения самостоятельной транспортировки зерна на терминалы в портах на Черном и Балтийском морях.

Подводя итоги, следует отметить, что преимуществами агрохолдингов *X* и *Z* являются современные технологии производства и управления, а основными проблемами – противоречие между требованиями повышения рентабельности через модернизацию производственных и управленческих процессов, с одной стороны, и социальным благополучием сельских сообществ, включая необходимость создания рабочих мест, с другой. Если говорить о будущем, то возможности этих компаний связаны прежде всего с увеличением цены их активов, нереализованным потенциалом увеличения продуктивности и получением экономии от совмещения. С другой стороны, как у компании *X*, так и у компании *Z* есть «слабые места»: это низкая рентабельность в случае с *Z* и прибыль, находящаяся в прямой зависимости от государственных субсидий, в случае с *X*. При этом надо учитывать, что обе компании финансировали свое развитие за счет привлечения средств из-за рубежа и теперь несут обязательства по бондам, деноминированным в иностранной валюте, что делает их уязвимыми ввиду колебания курса рубля.

Государственная политика существенно влияет на результаты деятельности этих компаний: изменение государственной поддержки сельскохозяйственно-

го сектора в связи с вступлением России в ВТО напрямую коснется холдинга *X*; в свою очередь, эмбарго и тарифы на экспорт из-за использования *Z* экспортных рынков создают большие проблемы именно для этого холдинга, однако не касаются холдинга *X*, ориентированного на внутренний рынок.

Развитие в России агрохолдингов объясняется в первую очередь тем, что преимущества большого размера и экономия от совмещения компенсируют дезэкономии на масштабах производства. Дальнейшие реформы законодательной сферы, усовершенствование институтов, регулирующих рынки, и улучшение инфраструктуры должны привести к снижению экономии от совмещения. Однако наиболее существенные трудности связаны с управлением работниками и взаимоотношениями с сельскими сообществами. Помогут ли агрохолдинги разрешить хронические социальные проблемы села или эти проблемы окажутся их ахилесовой пятой? Время покажет.

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